

The Invention Claimed Is:

1. A cultivator for aerating a ground surface including:

a support frame moveable relative to the ground surface generally along a first direction;

5 a tool support member connected to said support frame by at least two links, a first link pivotally connected the tool support member at one end and pivotally connected to a second link at an opposite end, said second link pivotally connected to said support frame, said tool support member operable along a second direction substantially perpendicular to the first direction;

10 a driver to selectively effect cyclic movement of the tool support member in said second direction;

a bias element to provide resilient damping of the pivoting movement of said second link in a first rotary direction; and

15 a dampening element to provide resilient damping of the pivoting movement of said second link in a second rotary direction opposite said first rotary direction, to progressively arrest pivoting movement of the second link in the second rotary direction.

2. A cultivator as claimed in claim 1 wherein said driver includes a mechanical arrangement which imparts reciprocating movement to one of the link arms.
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3. A cultivator as claimed in claim 2 wherein said driver includes a rotating flywheel and a connecting rod mounted to move reciprocally in

response to rotation of the flywheel.

4. A cultivator as claimed in claim 1, wherein said dampening element comprises a cam surface formed on said second link and a dampening block arranged to progressively engage said cam surface upon pivoting
5 movement of said second link.

5. A cultivator for aerating a ground surface including:
a support frame moveable relative to the ground surface;
a follower pivotally connected to the support frame by a first pair of spaced link arms having two pairs of equidistantly spaced pivot points for linear
10 movement of the follower along a first direction toward and away from the support frame;

a tool support member pivotally connected to the follower by a second pair of spaced link arms having two pairs of equidistantly spaced pivot points for linear movement of a cultivating tool along a second direction substantially
15 perpendicular to the first direction; and

a driver to selectively effect cyclic movement of the tool support member along said second direction and effect movement of the follower along said first direction;

a bias element to provide resilient damping of the movement of said
20 follower along said first direction away from said support frame, wherein said resilient damping is provided at an extremity of movement of the follower outward from the support frame along said first direction to urge the follower in the direction of inward movement toward said support frame; and

a dampening element to provide resilient damping of the movement of said follower along said first direction toward said support frame, said resilient damping provided at an extremity of movement of the follower inward toward the support frame in said first direction to progressively arrest movement of the follower in the direction of inward movement toward said support frame.

6. A cultivator as claimed in claim 5 wherein said first direction is substantially parallel to said ground surface and said second direction is substantially perpendicular to said ground surface.

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7. A cultivator as claimed in claim 5 or claim 6 wherein said first pair of link arms maintain said follower in a substantially constant orientation to said support frame.

8. A cultivator as claimed in any one of claims 5 to 7 wherein said follower, said second pair of link arms and said tool support member substantially form the respective sides of a parallelogram.

9. A cultivator as claimed in any one of claims 5 to 8 wherein said driver acts on one of said second link arms.

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10. A cultivator as claimed in claim 9 wherein said driver is a linearly operable device acting between said support frame and one of said second link arms.

11. A cultivator as claimed in claim 10 wherein said driver acts in a direction substantially parallel to the direction between the spaced pivot points of one of said first link arms.

12. A cultivator as claimed in claim 11 wherein said first link arms
5 include an upper link arm and a lower link arm, said upper link arm being positioned adjacent said driver.

13. A cultivator as claimed in claim 12 wherein said support frame includes a fixed support arm to which both said upper link arm and said driver are connected.

10 14. A cultivator as claimed in claim 13 wherein said linearly operable device is a hydraulic cylinder.

15. A cultivator as claimed in claim 12 wherein said lower link arm is bent to form an obtuse angle.

16. A cultivator as claimed in claim 5 wherein said bias element acts
15 against an extension of one of said first link arms.

17. A cultivator as claimed in any one of claims 5 to 16 wherein one or more of said first and second link arms is formed by two parallel elements.

18. A cultivator as claimed in any one of claims 5 to 9 wherein said driver includes a mechanical arrangement which imparts reciprocating
20 movement to one of the link arms.

19. A cultivator as claimed in claim 18 wherein said driver includes a rotating flywheel and a connecting rod mounted to move reciprocally in response to rotation of the flywheel.

5 20. A cultivator as claimed in claim 5, wherein said dampening element comprises a cam surface formed on one of said first link arms and a dampening block arranged to progressively engage said cam surface upon pivoting movement of said first link arm.

21. A cultivator as claimed in claim 20, wherein said dampening block is sized and positioned to be squeezed between said cam surface and said
10 follower when said tool support member is raised in said second direction.